

CURRITUCK NATIONAL WILDLIFE REFUGE

Currituck County, North Carolina

ANNUAL NARRATIVE REPORT

Calendar Year 2002

Refuge Manager

Date

Associate Manager Review

Date

Regional Office Approval

Date

Introduction

Currituck NWR is located in the northern part of Currituck County, North Carolina, along the Outer Banks barrier island chain. The Currituck Banks are part of an extensive coastal lowland that stretches from Newfoundland southward to Florida, and westward into the Gulf of Mexico. Along the Currituck Banks, inlets have periodically formed and reformed depending on storms, amount of sedimentation, tidal heights, and degree of vegetation on the barrier beach. At the present time, the closest inlet to the south is Oregon Inlet and to the north, Chesapeake Bay.

Acquisition of Currituck NWR was intended to preserve and protect a part of the NC Outer Banks, one of the largest undeveloped coastal barrier ecosystems remaining on the East Coast. Service ownership ensures perpetuation of basic wetland functions, including nutrient cycling, floodplain and erosion control, and will help preserve the role of Currituck Sound estuaries as nurseries and important waterfowl wintering areas. Ownership of the protective buffer east of the productive marshes bordering the sound protects the marsh from direct pollution sources associated with development.

The Outer Banks remained isolated from the mainstream of activity in early America, and those few people who lived there relied heavily on activities associated with the area's natural values for their subsistence. Activity in the Currituck Sound area reached a peak in the late 1800's when commercial fishing and market hunting were at an all time high. A number of hunting clubs were established for sport hunting of waterfowl and drew much of their membership from affluent northern businessmen and professionals.

The navigation hazards along the Outer Banks resulted in numerous shipwrecks along the coast. Lifesaving stations were established along the beach; several still exist. One station is located on an inholding within the Swan Island Unit and is used as a seasonal residence by a private citizen. The Currituck Lighthouse at Corolla still functions throughout the year.

During 1975 and 1976, The Nature Conservancy (TNC) acquired several parcels of land on the Currituck Outer Banks. The two major tracts of land were being utilized by the Swan Island and Monkey Island Hunting Clubs. Funds to purchase these areas were provided by the Mellon Foundation, a sponsor of the National Wetlands Project. TNC transferred approximately 500 acres of the Monkey Island Unit to the State of North Carolina for inclusion in the National Estuarine Sanctuary System as the Currituck Banks component. A narrow strip from sound to sea of about 50 acres was retained by TNC between the Sanctuary and the Monkey Island Unit.

The Migratory Bird Conservation Commission (MBCC) met to consider the Currituck Refuge on August 2, 1983. The MBCC approved the boundary of the refuge for the Monkey Island Unit and the Swan Island Unit. Two phases of acquisition resulted in 1,770 acres in fee title, 166 acres in conservation easement and some hunting blind rights. The 54 acre County Marshes Unit was acquired on May 18, 1988, through a trade with Currituck County, NC, for Monkey Island and the Waterlily Tract. The county agreed to repair the historical structures on the island, create an environmental education program for school children there, and conserve the waterbird nesting area within ten years or the property would revert back to the refuge. In 1998 the county decided not to

spend the money to complete repairs to the structures and allow the property to revert back to Service ownership. Additional acquisition included the Currituck Marsh Unit (1,142 acres) in September of 1997, the McLean Garner tract (Station Landing Unit, 247 acres) in April of 1998, and the Ocean Associates tract (South Marsh Unit, 882 acres) in November 1998, bringing the total refuge acreage to 4,099 acres in fee title and 3,931 acres in conservation easements.

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A. HIGHLIGHTS

Work Continues on the acquisition of Tract 15 (Section C, 1).

No sea beach amaranths, piping plovers, sea turtle strandings or nests were located this year (Section G, 2).

ARM Smith and MW Kennedy each guided a father/son pair to refuge hunting blinds during the youth duck hunt (Section H, 6).

B. CLIMATIC CONDITIONS

As an unmanned refuge, weather is not monitored on the Currituck NWR. Weather is monitored at Mackay Island NWR. See Mackay Island NWR Section B, Table 1.

C. LAND ACQUISITION

1. Fee Title

Tract 15

Throughout the year, multiple meetings and conference calls with realtors and landowners were held regarding the acquisition of Tract 15 on Currituck NWR. RM Baird participated in a conference call with Refuge Supervisor Bill Grabill, Realty Chief Tom Follrath, and Realty Specialist Brenda Johnson on January 24 to discuss the progress of Currituck NWR Tract 15 and the cleanup of the dump site. The consensus was that we should move forward with a surface cleanup but discuss this with the Solicitor before proceeding. On May 24, RM Baird participated in a Realty conference call to discuss closing documents for Tract 15 on the Currituck NWR. Also discussed were concerns regarding access to the north end and the adverse possession claim currently pending against Carova Corporation by Joe Heffernan. On August 17, RM Suzanne Baird met with Rodney Morris, contract surveyor, and Joe Heffernan, local landowner, to survey an inholding within Tract 15. RM Baird met with Rodney to see the layout of the proposed inholding and its possible impact to the acquisition. On August 28, RM Baird and ARM Smith participated in another realty conference call regarding Tract 15. The proposed survey for the inholding and easement conditions was reviewed. The next step will be to get a response from Mr. Heffernan on the easement conditions. And on October 4, RM Baird completed the Level I contaminates review for Tract 15 at Currituck NWR.



Tract 15 In Need of Clean-up

2. Easements

ARM Smith attended a Currituck County Board of Commissioner's meeting on April 1 to present a letter to the commissioners regarding possible plans for a local ATV guide service to utilize the access road on the Swan Island Unit for commercial business. The letter informed the commissioners that such use would not be permitted under the easement that established the road as a right-of-way.

RM Baird met with Dennis Hawthorn of the NC Division of Coastal Management on April 11 to discuss the maintenance of the access road on Swan Island Unit of the Currituck NWR. No permit was required for minor maintenance of the road. This road is the easement access to the White Property, to which the Service is required to provide reasonable access. Throughout next few months, RM Suzanne Baird worked with the White heirs and other owners regarding the access easement across the Swan Island Unit of the Currituck NWR. Earlier this year one of the access roads that these property owners were using was closed down. RM Baird has been working with the owners to improve the existing access and the understanding of use of this easement.

Later in the year, RM Baird worked with the Regional Solicitor and Mr. Bill Meredith to resolve a new usage of the easement on the Swan Island Unit of the Currituck NWR. Mr. Meredith will be allowed to transport customers across the easement for the purpose of conducting kayak tours from his property.

D. PLANNING

1. Research and Investigations

ARM Smith attended a Corps of Engineers meeting on April 4 to discuss plans and progress of a study of Currituck Sound.

D. ADMINISTRATION

As an unstaffed satellite refuge, Currituck is managed by the staff at Mackay Island. Three volunteers from Northwest Naval Communications Base assisted with office work and piping plover surveys on Currituck NWR.

F. HABITAT MANAGEMENT

1. General

Currituck NWR is located on the Currituck Banks stretch of North Carolina's Outer Banks barrier island. The Currituck Outer Banks are primarily maintained by a variety of coastal processes including long shore currents, tides and tidal currents, wave action, storm surges and wind action. These dynamic forces cause shorelines to undergo constant change. The adaptability of this coastal strand to constant physical change is a major part of their natural ecology. The following table indicates the approximate acreage of each major habitat type:

TABLE 1		
Habitat Types		
HABITAT TYPE	APPROXIMATE ACRES	PERCENTAGE
Wetland-Estuarine	2,482	61%
Woodland/Brush	1,415	34%
Sand/Dune Grass	202	5%
TOTAL	4,099	100.00%

2. Wetlands

Two types of wetland areas are situated across the three major land tracts of the refuge; these include the brackish water marshes that border Currituck Sound and the wetland flats between the primary dunes and the ancient secondary dunes. The most extensive area of the interdunal flats occurs on the Swan Island unit where the refuge operates a water control structure. This structure is situated in an ancient dune line where the Flats drain into a creek which empties into Currituck Sound (In the early to mid-1880's, this was the "Old Currituck Inlet", passable by large sailing vessels). The structure is adjusted to maintain moist soil conditions by trapping rainwater through the summer to promote moist soil species.

The second type of wetland on the refuge includes the Currituck marshes along the western side of the refuge. These emergent marshes are dominated by *Juncus roemerianus*, *Typha* spp., and *Spartina cynosuroides*. These sizeable marshes are influenced by wind tides. Management on marshes is limited to prescribed burning and the placement of wood duck boxes.

RM Baird met with state and federal agency representatives on June 17 to discuss possible NAWCA Grant projects. The Swan Island Flats well project was discussed for Currituck NWR. The Ducks Unlimited funds for this project were withdrawn earlier in the year. On July 16 RM Baird submitted the project to install a well field for the Swan Island Unit of the Currituck NWR to NAWCA Grant proposal for Southeastern Virginia and Northeastern North Carolina. The well field will provide a reliable water source for the Swan Island Flats Impoundment which will improve waterfowl habitat production. This issue was revisited on October 29, when ARM Smith and Harvey Hill joined WHM Biologist Bob Noffsinger and others to give an on-site presentation to representatives of a NAWCA grant committee regarding the grant package submitted to them. The Swan Island Flats well field installation project is part of the Sound Investment NAWCA grant proposal.

Swan Island Flats

This impounded lowland is managed for moist soil plant species. Water levels are maintained by flash-board risers at the Perebees' Inlet. Since no pump facility exists, rainfall and evaporation are the major factors in determining water levels. The flashboards were removed in April to drain the impoundment. Areas were disked in May and vegetation under the fence was sprayed to kill woody vegetation. In the fall, some trees and branches inside the fence on the western portion of the unit were cut to allow the passage of a tractor. Flashboards were reinstalled to a full pool level in early September and remained through the winter migration period.

Vegetation transects were completed in September. Despite the dry year, this impoundment did very well as a whole. Good foods represented 53% of the sample and non-foods composed 17% of the sample.



Tundra Swans in Coming in for a Landing

2. Forests

Forty-eight percent of the total refuge consists of maritime shrub and forest habitat. A dense shrub thicket occurs on the protected west side of the primary dune system. Dominant shrub species include American holly, yaupon holly, wax myrtle, and live oak. Farther west from the primary dunes, a low, laterally branching maritime forest dominated by live oak and red cedar is found. West of ancient secondary dunes the forest becomes taller and exhibits a more open canopy where loblolly pine is dominant. All of these shrubs and woodland areas provide important resting and cover habitat for neotropical passerines and raptors.

4. Other Habitats

Approximately 243 acres of beachfront and sand dune are contained within the Swan Island and Monkey Island units. The refuge's fee title ownership extends along the beachfront out to the mean high water line. The intertidal zone falls within the state's ownership according to state law.

9. Fire Management

There were no prescribed burns on Currituck NWR this year. Three wildfires occurred this year, burning a total of 153 acres. Station Landing Marsh had a 2 acre wildfire, South Marsh Unit had a 30 acre wildfire at Little Skinner had a 30 acre wildfire and a 121 acre wildfire at Oak Pond.

RM Baird met with Habitat Management Biologist John Stanton and Don Cheek from the Corolla Light Community Association on May 7 regarding a private lands project. Don is interested in developing a prescribed fire program in the marsh habitat of the Corolla Light Community to improve the area for wildlife. He is going to contact the NC Division of Forest Resources for assistance.

10. Water Rights

RM Baird met with Currituck County Manager Dan Scanlon to sign a Memorandum of Agreement regarding the Currituck NWR. The agreement helps to protect the cone of depression surrounding county water well.

G. WILDLIFE

1. Wildlife Diversity

A rich wildlife diversity occurs across the Currituck Outer Banks due to the diversity of habitats along this area. Avian species comprise the bulk of the wildlife diversity as indicated by over 240 species having been documented at Back Bay NWR which lies some ten miles north of Currituck NWR. The Currituck Outer Banks serves as a migration corridor for a variety of birds such as accipiters, falcons, neotropical warblers, shorebirds, gulls, terns, and many waterfowl species. Periodic monitoring covers waterfowl and the threatened piping plover.

2. Endangered and/or Threatened Species

An Annual piping plover survey was conducted on May 31, 2002. No piping plover nests or individuals were detected this year. The last recorded nest along the beach from Corolla to the NC/VA state line was in June of 1999. The last Piping Plover sighting was on April 15th, 2001. There were also no sea turtle nests detected this year. Daily sea turtle "crawl" surveys were not conducted.

3. Waterfowl

Staff completed six aerial waterfowl surveys of the entire refuge between November 7, 2001 and February 28, 2002. The survey data is summarized in the following tables:

TABLE 2 Wintering Waterfowl Occurrence 2001-2002					
GROUP	PERCENT	NUMBER OF USE DAYS	PERCENT DIFFERENCE FROM 2000- 2001	PEAK NUMBER	PEAK PERIOD
Tundra Swans	36.1	63400	41	1441	2/28/02
Canada Geese	5.3	9334	31	240	11/07/01
Snow Geese	0.0	0	-100	0	11/07/01
Ducks	56.9	99853	-1	2004	12/06/01
Coots	1.6	2850	48	75	12/06/01
All Waterfowl	100.0	175436	10	2976	12/06/01

A. Geese and Swans

No snow geese were seen on Currituck NWR this year. Canada goose use was up 31% and tundra swan use was up 41% with 1441 seen the end of February.

B. Ducks and Coots

Blue Winged Teal



Overall, duck use changed very little from last year going down just 1%. Dabblers comprised the majority of duck use with black duck being the most commonly seen (17% of duck use). Yet, the species with the most seen at any one time was the pintail with 1000 seen in the beginning of December. After black duck, the species with the most use were pintail, mallard, gadwall, and green wing teal. The only diving duck to make an impression in the total usage was the merganser comprising 0.1%. There were no blue wing teal, ruddy duck, bufflehead, ringneck or canvasback seen this year.

Coot numbers were up this year by 48% with a peak number of 75 seen the beginning of December.

TABLE 3
Composition of Wintering Ducks
2001-2002

SPECIES	PERCENT	NUMBER OF USE-DAYS	PERCENT DIFFERENCE FROM 2000-2001	PEAK NUMBER	PEAK PERIOD
G. W. Teal	5.6	9757	-11	360	11/07/01
Gadwall	9.9	17302	-38	312	12/06/01
Mallard	10.1	17753	3	272	2/28/02
Black Duck	17.0	29845	-16	333	2/15/02
Wood Duck	0.0	0	-	0	11/07/01
B. W. Teal	0.0	0	-	0	11/07/01
Shoveler	0.2	280	280	20	2/25/02
Wigeon	0.0	87	-96	10	11/07/01
Pintail	14.0	24597	333	1000	12/06/01
Ruddy Duck	0.0	0	-100	0	11/07/01
Bufflehead	0.0	0	-	0	11/07/01
Merganser	0.1	232	33	8	2/15/02
Ringneck	0.0	0	-	0	11/07/01
Canvasback	0.0	0	-	0	11/07/01
Unknown	0.0	0	-	0	11/07/01
All Ducks	56.9	99853	-1	2004	12/06/01



“Are You Lookin’ at Me?” - A Ring-Necked Duck

Wood ducks

Wood duck nesting boxes located within the Currituck Marsh Unit of the refuge were monitored for production this year. The data that was collected from the 17 remaining boxes is summarized in the table below. Of the 17 boxes available to the wood ducks, ten were utilized by wood ducks. No other species were known to use these boxes this year. Out of the ten used, seven broods were estimated to have been produced with a total of 54 hatchlings.

<p>TABLE 4 WOOD DUCK BOX PROGRAM NESTING YEAR - 2002</p>		
	NUMBER	PERCENT
Total usable boxes	17	100
Total boxes checked	17	100
Estimated boxes used by wood ducks	10	59
Number of boxes with dump nests	1	6
Estimated boxes used by other ducks	0	0
Estimated boxes used by other wildlife	0	0
Estimated wood duck broods produced	7	41
Estimated wood ducks hatched	54	

4. Marsh and Water Birds

Many of the 20 species of marsh and water birds that use Mackay Island also frequent wetlands of Currituck NWR either year round or seasonally. Most heron use is by great blue, little blue and green-backed herons. Common egrets, snowy, and cattle egrets are found on the refuge throughout the year. Glossy ibises and tri-colored herons seasonally frequent refuge marshlands. All of these species utilize the rookery on Monkey Island. The rookery contains over 1,000 nests and has been ranked the top littleblue heron rookery in the state in the past. The nesting survey of Monkey Island was not conducted this year. This nesting area is commonly used by Cattle Egrets, Great Egrets, Green-Backed Herons, Little Blue Herons, Snowy Egrets, Tricolored Herons, Great Blue Herons, Glossy Ibises, and Black-crowned night Herons.

Other seasonal water bird use is derived from coots, pied-billed grebes, and double-crested cormorants. King and Virginia rails, are the most common rails on most refuge tracts. Infrequent marsh birds include sora, clapper rails, and least bitterns.

5. Shorebirds, Gulls, Terns and Allied Species

The coastline of the Currituck Banks provides important migratory habitat for a variety of shorebirds during their spring and fall passages. The beach of the Currituck Outer Banks are especially valuable during shorebird migrations due to the lack of regularly exposed tidal (i.e., lunar) mudflats in Currituck Sound and Back Bay where irregular wind tides infrequently expose mudflats in these areas. Several species using this beachfront such as sanderling, least sandpiper, and black-bellied plovers are recognized by the Service as species of special concern which have probably suffered recent declines in their continental populations. Sanderling, ruddy turnstone, semipalmated plovers, and black-bellied plovers are among the most abundant migrants along the Currituck Banks during both migrations.

The inter-dunal areas, marsh, and irregularly exposed mudflats on the Currituck Sound are foraged over by greater and lesser yellowlegs, solitary and spotted sandpipers, and by willet during spring and fall migrations. Exposed mudflats on the east side of Currituck Sound are heavily used by yellowlegs, semipalmated plovers, and other shorebirds for protection and forage zones during spring Nor'easter storms.

A variety of gulls and terns use the beachfront and other water areas of the refuge tracts. Ring-billed, herring, great black-backed, and laughing gulls are the most common gulls. Common, royal, sandwich, Forester's and least terns frequent the refuge beachfront from spring through fall.



Terns and Peeps Sharing the Shore

6. Raptors

Moderate numbers of raptors use the refuge during the fall migration. Stop-overs are made by American kestrels, sharp-shinned hawks, merlin, and Cooper's hawks. Northern harriers are commonly seen over marshlands from December through March. Ospreys are common and nest on platforms and trees throughout the refuge.

15. Animal Control

Unfortunately, several types of non-native animals including feral horses, feral pigs, and domestic cattle have been left to range over refuge tracts. Also, with the increased numbers of year-round human residents, no doubt there are also domestic pets on the Currituck tracts. By far, the most prominent issue in recent years has been the existence of what the locals refer to as the "wild" horses.

The origin of the horse herds on the Currituck Banks is unclear. Little has been done to control their numbers and competition with native plants and wildlife has been apparent in recent years.

The horses are commonly found in the inter-dunal flats and along the beachfront grazing on native grasses and herbs; again, with the population upswing of full-time residents, the horses are increasingly found near the beachfront homes grazing on grass yards and ornamental flowers and shrubs as well as seeking shelter in the leeward side and carports of the homes.

RM Baird attended a Wild Horse Advisory Board meeting on April 10. The bylaws for the organization were drafted this year. Discussion also began regarding the northern fence along the NC/VA state line to preclude the horses from VA. A horse adoption program was also discussed.

ARM Smith who will be taking over the refuge's role on the Advisory Board until the Refuge Manager position is filled.

Firefighter Flint and intern Julie Webster met with Michelle Droszcz of the NC Estuarine Research Reserve (NCERR) on July 9 to discuss the establishment of feral horse exclosures along on Currituck NWR and the NCERR.

H. PUBLIC USE

1. General

The refuge is open to beach activities, hiking, bird watching and photography with visitation estimated at 5,000. Travel to the refuge is via NC 12 to Corolla and then northward on the beach between the dune line and the ocean. Over 30,000 vehicles travel the beach each year to access the communities of Ocean Beach, Seagull, Swan Beach, North Swan Beach and Carova Beach. It is also the only route for surfers, sunbathers and surf-fishermen. The refuge presently has no facilities or trails, but visitors may freely explore the dunes and maritime forests during daylight hours. Camping, fires and free roaming pets are not permitted.



Catching Some Fish and Sun on another Beautiful Currituck Day

4. Interpretive Foot Trails

ARM Smith and Law Enforcement Officer Mike Panz joined Michelle Droszcz of the NC Division of Coastal Management and environmental education personnel from the NC Wildlife Resources Commission on November 26 to explore an area on the NC Estuarine Research

Reserve near Corolla, NC and extending to Currituck NWR for the possibility of constructing a trail through the area. An extensive boardwalk would be required to link the few upland areas. Prior conversations with a Coastal Areas Management Act representative did not support the establishment of such a boardwalk due to disturbance to and loss of wetlands.

7. Other Interpretive Programs

In a partnership with the NC Wildlife Resources Commission and the Currituck Waterfowl Association, the refuge helped coordinate a youth hunt in the county on January 25-26. Assistant Refuge Manager (ARM) Kendall Smith presented a program on Mackay Island and Currituck NWRs during the orientation session. ARM Smith and Temporary Maintenance Worker Jack Kennedy each guided a youth and father the following morning, utilizing the refuge blinds. It was a fun and educational experience for all participants.

8. Hunting

NCWRC staff joined refuge staff in a cooperative effort to "bush" the eight refuge waterfowl hunting blinds on Currituck NWR on October 23.

TABLE 5 Currituck NWR Waterfowl Hunt 2001-2002		
	NUMBER	PERCENT
Hunt Days (hunt days available X 8 blinds)	160	
Parties checked-in	53	49%
Stand-by parties assigned	55	51%
Use Days (by hunting parties)	108	68%
Parties returning harvest data cards	74	69%
Total birds reported harvested	132	
Average number of birds harvested by party	1.22	

17. Law Enforcement

The enforcement efforts at Currituck NWR are conducted by the staff of Mackay Island NWR, who has a 1 ½ hour drive down the beach, or a 10 minute boat ride to reach the refuge. An ATV is stored in a CONEX building for patrol of the four main roadless tracts. The other tracts are

only accessible by boat or on foot. The public is allowed to drive on the beach east of the dune line at any time of the day or year, but are restricted from driving on the refuge. Local residents and property owners may obtain permits from the county to operate personal ATV's on the beach, public roads, or on their private property. ATV operators must be age 16 and have liability insurance to obtain a permit. Off road violations continue to be the major problem.

TABLE 5 Law Enforcement Statistics for Currituck NWR			
Type of incident	# Reports	Written Warning	Violation Notice
Aircraft: Low flying	2		
ARPA	1	1	
Arson	2		
Assist Citizen	3		
Assist Other Agency	6		
Commercial Operations	2	2	
Traffic Violation	4		
Trespass: Off Road	104	8	
Vandalism	5		
TOTAL	129	11	0

I. EQUIPMENT AND FACILITIES

3. Major Maintenance

RM Baird, ARM Smith and Maintenance Mechanic Futrell met at the Swan Island Unit of the Currituck NWR on April 15 to begin the maintenance work on the access road and clean up of a dump site on the refuge.

J. OTHER ITEMS

1. Cooperative Programs

RM Baird met with Michelle Droszcz of the North Carolina National Estuarine Research Reserve and her supervisor John Taggart on February 5. This was an introductory meeting for Michelle, who started work in early February. Numerous cooperative projects between the Reserve and Currituck NWR were discussed.

RM Baird worked on a coordination letter with the Corps of Engineers to begin investigating the options for stabilizing Monkey Island on the Currituck NWR. She sent a draft out on May 15 for review.

ARM Smith and Wildlife Habitat Management Biologist Bob Noffsinger met with Jay Bender on October 10 to discuss private lands project on Bender's property bordering Currituck NWR. Mr. Bender owns Outback Tours in Corolla and is interested in restoring wetlands on his property to provide grasses for the feral horses. Though our objectives differ, the project will also improve habitat for migratory birds.

4. Credits

Various: Compiled and edited by 2003 refuge staff and volunteer interns Kelsey Piper and Tara Moore.

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Refuge Staff